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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/982,488 | 10/17/2001 | Jeffrey Skolnick | 10886-045002 | 7996 |

20985 7590 03/24/2005

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| EXAMINER |
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CLOW, LORI A

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| ART UNIT | PAPER NUMBER |
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1631

DATE MAILED: 03/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/982,488

Applicant(s)

SKOLNICK ET AL.

Examiner

Lori A. Clow, Ph.D.

Art Unit

1631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114.

Applicants' response, filed 23 December 2004, has been fully considered. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set presently being applied to the instant application.

Claims 9-11 are currently pending.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 9-11 remain rejected under 35 U.S.C. 102(a) as being anticipated by Kolinski et al. (Proceedings of HRCL Workshop on Monte Carlo Approach to Biopolymers and Protein Folding.(1998) P. Grassberge et al., Eds., World Scientific, Singapore/London, pages 100-130:PTO-1449, reference AI), for the reasons set forth in the previous Office Action.

Claims 9-11 remain rejected under 35 U.S.C. 102(a) as being anticipated by Kolinski et al. (J. Phys. Chem. (1998) Vol. 102, pp.4628-4637:PTO-1449, reference AJ), for the reasons set forth in the previous Office Action.

Response to Applicant's Arguments

Applicant states that the “Kolinski Workshop does not describe a computer-assisted method for determining a three-dimensional structure of a target amino acid sequence with a template amino acid sequences and producing from the alignment a three dimensional reduced protein model...” This is not persuasive and as outlined in previous Office Actions, Kolinski et al. clearly teach each embodiment of the instant claims. Applicant first states that the “computer-implemented methods of the instant invention use a force field designed entirely of a “knowledge-based” origin” and that “the instant invention is based on a less complex representation and simpler definition of the force field, and is more computationally efficient than C-alpha-based models, such as MONSSTER”. This is not persuasive, as Kolinski et al. do teach a knowledge based force field of short-range interactions at page 124, section 8, for example. Further, Kolinski et al. teach that their method “performed better than MONSSTER” (page 128). Applicant’s argument implies that Kolinski et al. were using MONSSTER and that the present invention is an improvement. Clearly, Kolinski et al have shown that their method is not MONSSTER and that their model performed better.

Applicant further argues that Kolinski et al “do not produce an interaction center chain and project it onto an underlying cubic lattice model. Again Applicant is pointed to page 114, section 4, explaining the side chain only representation of protein conformational space.

Art Unit: 1631

Furthermore, Figure 2 illustrates precisely a conformation of a short chain connecting centers of mass of protein side groups which are projected onto a lattice.

Applicant lastly argues that Kolinski et al. (J. Phys. Chem.) does not produce an interaction center chain onto an underlying cubic lattice to produce a projected chain of interaction centers by using calculated force field comprising short-range interactions”. This is not persuasive, as stated in the previous Office Action. Kolinski et al. state that the protein model representing the work is a lattice representation with good geometric fidelity. It uses single-interacting units per residue, not, as Applicant states, a single atom representation. Further the model includes a large number of lattice vectors representing bonds between the centers of mass of the protein side chains (see discussion, page 4636). Furthermore, Kolinski et al. state that “the purpose of this work is to analyze the role of the generic protein like regularities seen in protein chains, the role of sequence-specific short-range correlations of the side chain positions and this interplay” (page 4628).

No claims are allowed.

Conclusions

The rejections under 35 USC 112, 2nd paragraph have been withdrawn in view of Applicant's response.

The rejections under 35 USC 102(a) are hereby maintained for the reasons of record.

Inquiries

Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the PTO Fax Center. The

Art Unit: 1631

faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993) (See 37 CFR § 1.6(d)). The Central Fax Center Number is (571) 273-8300.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lori A. Clow, Ph.D., whose telephone number is (571) 272-0715. The examiner can normally be reached on Monday-Friday from 10 am to 6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ardin Marschel, Ph.D., can be reached on (571) 272-0718.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

March 14, 2005
Lori A. Clow, Ph.D.
Art Unit 1631
Lori A. Clow

MARJORIE A. MORAN
PRIMARY EXAMINER

Marjorie A. Moran
2/16/05